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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/716,454	11/20/2003	Timothy Andrew Healy	839-1406	6636

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EXAMINER

BEHNCKE, CHRISTINE M

ART UNIT	PAPER NUMBER
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3661

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/716,454

Applicant(s)

HEALY ET AL.

Examiner

Christine M. Behncke

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 10-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4, 9, 18, 19 and 21 is/are rejected.
- 7) ☒ Claim(s) 5-8, 20 and 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 6/9/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

1. This office action is in response to the Response to Restriction Requirement filed 14 July 2006, in which claims 1-9 and 18-22 were presented for prosecution.

#### ***Election/Restrictions***

2. Applicant's election of Group 1, claims 1-9 and 18-22, in the reply filed on 14 July 2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

#### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 9, 18, 19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Davis et al., US 6,810,655.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in

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the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

4. **(Claims 1, 2 and 18)** Davis et al. discloses a method for scheduling a fuel split for a gas turbine combustor comprising: determining a target exhaust temperature corresponding to a desired nitrogen oxide (NOx) at a reference fuel split (column 6, lines 4-16 and column 7, lines 3-18); determining an exhaust temperature error based on a comparison between a scheduled exhaust temperature and the target exhaust temperature (column 8, line 56-column 9, line 7); converting the exhaust temperature error to a projected NOx leveling fuel split adjustment (column 9, lines 8-28); adjusting the reference fuel split using the projected NOx leveling fuel split adjustment (column 5, lines 55-62 and column 6, lines 4-16), and applying the adjusted fuel split to determine fuel flow to the combustor (column 5, lines 55-62).

Davis et al. further discloses wherein the target exhaust temperature is determined based on at least one parameter of a group of parameters consisting of specific humidity, compressor inlet pressure loss and turbine exhaust back pressure (column 5, lines 55-62).

5. **(Claim 3)** Davis et al. further discloses wherein the fuel split level is a plurality of fuel split levels each indicating a portion of fuel flow to one of a plurality of zones of fuel nozzles in the combustor (Figure 2).

6. **(Claim 4)** Davis et al. further discloses wherein the step of determining the error to adjusting the reference fuel split are performed in connection with a nitrogen oxide leveling algorithm (column 8, lines 1-55).

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7. **(Claim 9)** Davis et al. further discloses wherein the comparison used to determine the exhaust temperature error is a difference between a scheduled exhaust temperature and the target exhaust temperature, and the difference is the exhaust temperature error (column 8, line 56-column 9, line 7).

8. **(Claim 19)** Davis et al. further discloses wherein the adjusted reference fuel split schedule further comprises an adjusted first fuel split indicating a portion of fuel flow to a primary fuel nozzle in the combustor and an adjusted second fuel split indicating a portion of the fuel flow to be mixed with secondary air entering the combustor (Figures 1 and 2, column 4, lines 41-64).

9. **(Claim 21)** Davis et al. further discloses wherein the steps of determining the error to converting the error to an adjustment are performed in connection with a nitrogen oxide leveling algorithm (column 8, lines 1-55).

***Claim Rejections - 35 USC § 102***

10. Claims 1, 2, 4, 9, 18, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Keeler et al., US 5,539,638.

11. **(Claims 1, 2 and 18)** Keeler et al. discloses a method for scheduling a fuel split for a gas turbine combustor comprising: determining a target exhaust temperature corresponding to a desired nitrogen oxide (NOx) at a reference fuel split (column 9, lines 11-38); determining an exhaust temperature error based on a comparison between a scheduled exhaust temperature and the target exhaust temperature (column 4, lines 33-54 and column 7, lines 15-47); converting the exhaust temperature error to a projected NOx leveling fuel split adjustment (column 9, lines 11-38); adjusting the

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reference fuel split using the projected NOx leveling fuel split adjustment (column 12, lines 37-55 and line 66-column 13, line 7), and applying the adjusted fuel split to determine fuel flow to the combustor (column 12, lines 37-55 and line 66-column 13, line 7).

Keeler et al. further discloses wherein the target exhaust temperature is determined based on at least one parameter of a group of parameters consisting of specific humidity, compressor inlet pressure loss and turbine exhaust back pressure (column 13, lines 8-35).

12. **(Claim 4)** Keeler et al. further discloses wherein the step of determining the error to adjusting the reference fuel split are performed in connection with a nitrogen oxide leveling algorithm (column 2, line 56-column 3, line 5).

13. **(Claim 9)** Keeler et al. further discloses wherein the comparison used to determine the exhaust temperature error is a difference between a scheduled exhaust temperature and the target exhaust temperature, and the difference is the exhaust temperature error (column 12, lines 14-29).

14. **(Claim 21)** Keeler et al. further discloses wherein the steps of determining the error to converting the error to an adjustment are performed in connection with a nitrogen oxide leveling algorithm (column 2, line 56-column 3, line 5).

***Allowable Subject Matter***

15. **Claims 5-8, 20 and 22** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.


***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine M. Behncke whose telephone number is (571) 272-8103. The examiner can normally be reached on Monday - Friday 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas G. Black can be reached on (571) 272-6956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CMB

  
**THOMAS BLACK**  
**SUPERVISORY PATENT EXAMINER**